

**What is claimed is:**

1. A material useful as a substrate for preparing articles, comprising:  
a compressed sheet of graphite having graphite intercalation compounds included therein.
2. A material of claim 1 wherein the intercalant comprises a material selected from the group consisting of halogens, mixed halogens, halides, oxidizing acids, alkali metals, transition metals and mixtures.
3. A material of claim 1 which comprises at least 1% of one or more graphite intercalation compounds.
4. A material of claim 1 which comprises from 3 to 20 % by weight of a graphite intercalation compound.
5. A material comprising at least one layer of a material of claim 1 and another layer of flexible graphite sheet.
6. A material of claim 1 which has a density of from about 0.1 to about 1.5 grams/cm<sup>3</sup>.
7. A material of claim 1 which has a thickness of from 0.075 to 1.4 mm.
8. A material of claim 1 which has an electrical conductivity within the range of from 1.0 to  $7.6 \times 10^7 \Omega^{-1}m^{-1}$ .
9. A material of claim 1 which has a thermal conductivity within the range of 5 to 2000 W/m K .

10. A material of claim 1 which has an electrical conductivity of less than about  $8 \mu$  ohm-meter.

11. A material of claim 1 wherein the sheet contains resin at a level of at least about 5% in the flexible graphite sheet.

12. A process for preparing a material useful as a substrate for preparing articles such as an embossed or unembossed flexible graphite sheet, comprising:

intercalating a sheet of flexible graphite to an extent necessary to form graphite intercalation compounds which increase the thermal and/or electrical conductivity of the graphite sheet; and

compressing the sheet following intercalation.

13. A process of claim 12 wherein the intercalant comprises a material selected from the group consisting of halogens, mixed halogens, halides, oxidizing acids, alkali metals, transition metals and mixtures.

14. A process of claim 12 wherein the sheet following intercalation comprises at least 1% of one or more graphite intercalation compounds.

15. A process of claim 12 wherein the sheet following intercalation comprises from 3 to 20 % by weight of a graphite intercalation compound.

16. A process of claim 12 wherein at least one layer of a material of claim 1 is compressed with another layer of flexible graphite sheet.

17. A process of claim 12 wherein the final sheet has a density of from about 0.1 to about 1.5 grams/cm<sup>3</sup>.

18. A process of claim 12 wherein the final sheet has a thickness of from 0.075 to 1.4 mm.
  19. A material of claim 12 wherein the final sheet has an electrical conductivity within the range of from 1.0 to  $7.6 \times 10^7 \Omega^{-1}m^{-1}$ .
  20. A process of claim 12 wherein the final sheet has a thermal conductivity within the range of 5 to 2000 W/m K .
  21. A process of claim 12 wherein the sheet contains resin at a level of at least about 5% in the flexible graphite sheet.
  22. A material of claim 12 wherein the final sheet has an electrical resistivity of less than about  $8 \mu \text{ ohm-meter}$ .